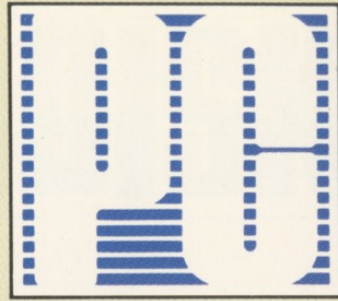


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VOL. 1 **NO. 9**

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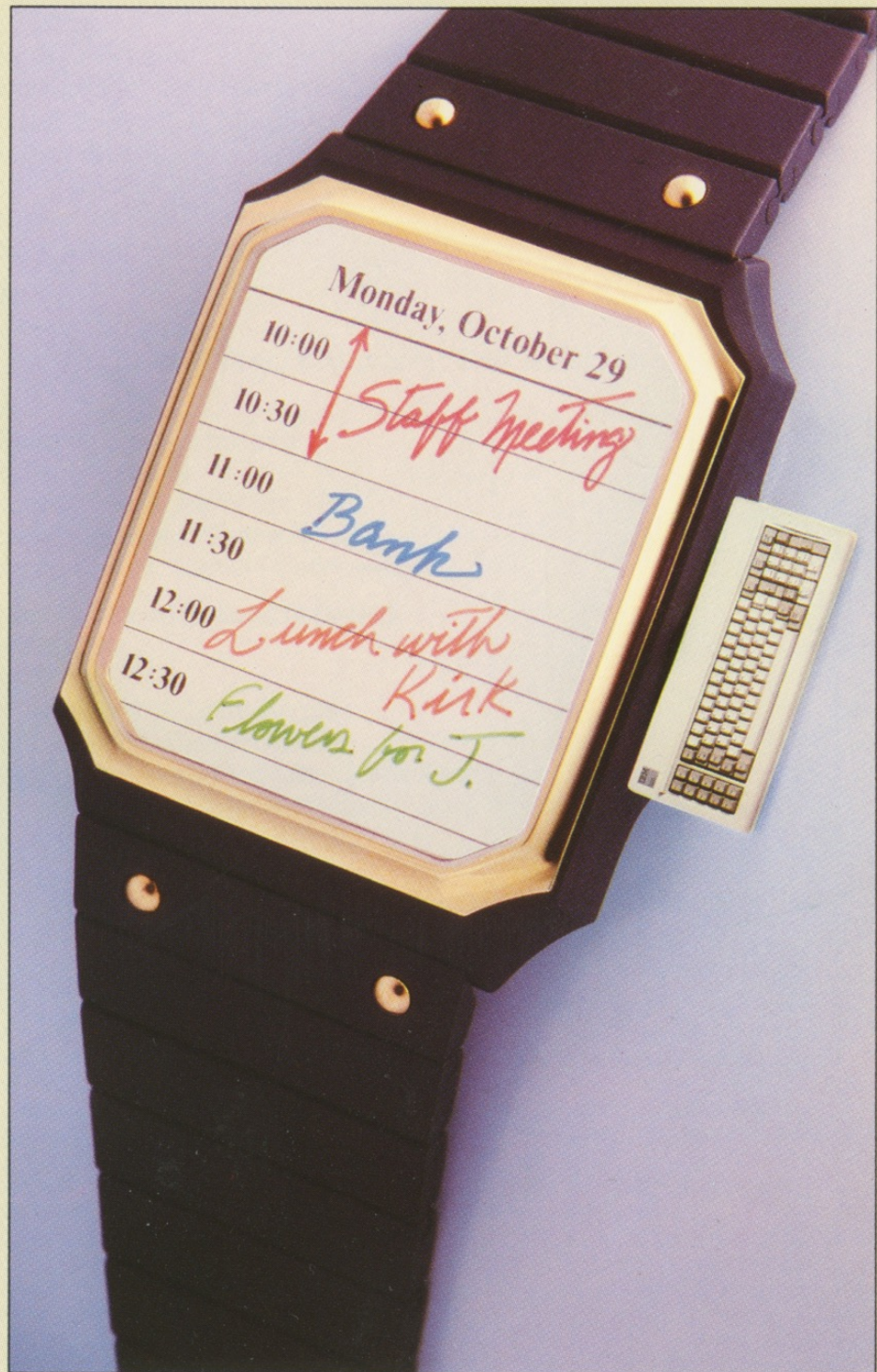
THE PLANNER

A PRACTICAL
SCHEDULER
FOR YOUR
DAILY
APPOINTMENTS
AND
ACTIVITIES

PLUS:

- NOTE INDEXER
- SOUND TUTOR
- FLASH CARD
- BASIC SHRINKER
- POLITICAL PURSUITS

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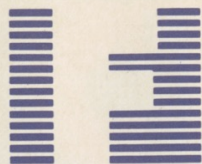
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FROM THE EDITOR

What's happening to that darling of American business, the microcomputer industry? Recent reports in such august media as *The New York Times* and *The Wall Street Journal* state that sales of microcomputers, and the software that goes with them, are off the glory pace of years past. While the industry is hardly in trouble, as most sectors continue to grow at 20% or better, the first blush of America's romance with microcomputers appears to be wearing off.

Much attention has been focused on the increasing competition in the microcomputer industry. The constant flow of new products erodes the market base of existing products. Continuing price reductions by leaders such as IBM and Apple put serious pressure on all industry participants.

Demand is slowing because of a growing disillusionment with microcomputers, a kind of consumer backlash. For years we've been hyped on the remarkable capabilities of these machines—how much easier they can make our lives and how much more productive they can help us be. I think we are beginning to see some of the reaction to this hype as people find that microcomputers are not all that easy to use, and worse, not all that useful.

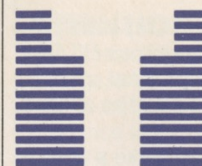
I don't think disillusionment is the only reason for slackening demand. People are wary of the industry's volatility (getting stuck with obsolete products) and are becoming more selective and critical as they become more knowledgeable. However, I think disillusionment is the most important reason, especially as it applies to software.

The public's expectations of software focus on two central issues: what can one do with a microcomputer, and how easy is it to do? Responding to these issues is our primary challenge here at *PC Disk*. In a previous column I discussed computer literacy and user-interface design, which is the challenge of making software easy to use. The other side of the coin is making software that is truly useful.

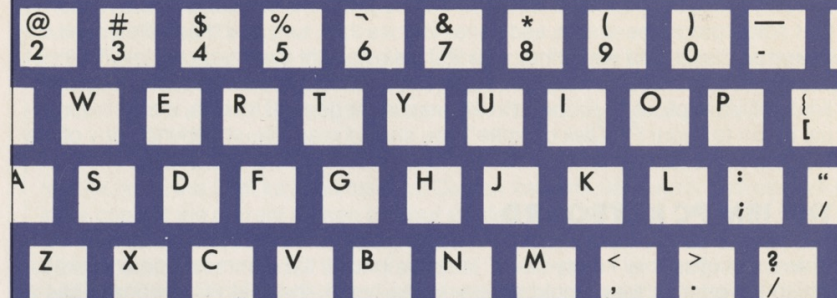
While easy to state, this is far from easy to do. It means finding that right combination of the microcomputer's strengths—speed, information management, interactivity—with tasks people want done. Some applications and associated products are already well-established. Word processing and spreadsheets come readily to mind. In this area, we at *PC Disk* can offer enhancements to such products tutorials on how to use them, and tools to get more use from them. Other applications are still taking shape—education, personal productivity, home management. In these areas our challenge is to identify where a computer can help, and apply it intelligently.

In all cases, feedback from our readers can help. Let us know how you use your microcomputer, what purposes it serves for you, and what other uses you would like to put it to. With your guidance, we can overcome the growing disillusionment with microcomputers and help you get more practical benefits from your machine.

Morris L. Effros



TECHNICAL PREFACE



To help our readers make the most of PC Disk, we would like to provide some background information concerning the editorial diskette, the accompanying manual, and how to use both. We don't expect all of the following topics to interest all our readers. Nevertheless, we prefer to err on the side of comprehensive support rather than leave any of our readers confused. So we encourage everyone to at least skim this section to assure a solid background for the use of PC Disk.

USAGE REQUIREMENTS

PC Disk has been designed for use on an IBM Personal Computer with a minimal set of hardware components: a keyboard, a monitor, and the computer itself. Running DOS 1.1, a minimum of 64K of main memory is required. Under DOS 2.0 and DOS 2.1, a minimum of 128K is required. The display unit can be a monochrome display adapter and monitor, or the color graphics display adapter with a color monitor, a black and white monitor, or an RF Modulator and TV set. The computer itself can be the PC, the PC-XT, or the PCjr. For the PCjr we recommend the use of a monitor rather than a TV set, since most of our software is written for an 80-column display. However, a TV set does provide a workable display.

These three pieces of equipment are all you need to run the majority of *PC Disk* software. Wherever possible, we make the use of any other hardware optional. So, for example, many of the programs will generate printed output, but a printer is not required in order to use them. Occasionally, however, due to the nature of a program or its design, a particular piece of equipment will be necessary. When a program requires equipment not in the minimum configuration stated above, this component will be listed as a "Special Requirement" on the program's title page in this manual.










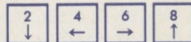



In regard to software, all *PC Disk* programs are designed to run under DOS 1.1, DOS 2.0, and DOS 2.1. Furthermore, all BASIC programs in the magazine are designed to run under Microsoft's Advanced BASIC. Neither DOS nor Advanced

BASIC are provided on the *PC Disk* diskette; they must be acquired separately. As a rule, these are the only outside software elements you will need to use *PC Disk*. We will occasionally publish a program which uses some additional, publicly available software product. Any such additional software will be listed as a "Special Requirement" on the program's title page in this manual.

Our closing remark on this topic is a recommendation that you make a copy of your *PC Disk* diskette to work with and save the original as a backup. In some cases, you will have to make a copy of the program in order to use it. The reason is that some programs create additional files as they run, and these files must be stored on diskette as well. Since your *PC Disk* diskette is write-protected, it cannot receive these additional files, so a separate, working copy is needed. These situations will be explicitly mentioned in the manual. In general though, where the manual refers to "your *PC Disk* diskette" you should read "your working copy of the *PC Disk* diskette."

THE IBM PC KEYBOARD

In *PC Disk* we have tried to make our instructions as clear as possible by the consistent use of special key symbols. In addition to all the common typewriter keys, which we print as they would appear when typed, the IBM PC keyboard has a number of special keys. We have designed symbols for these keys, which are intended to resemble as much as possible the keys themselves. Since these symbols are used extensively throughout the instructions, we have included the following list to help you, our reader, get any needed bearings.

THE FUNCTION KEYS	
THE ESCAPE KEY	
THE CONTROL KEY	
THE TAB KEY	
THE BACKSPACE KEY	
THE SHIFT KEY	
THE PRINT SCREEN KEY	
THE ENTER KEY	
THE NUM LOCK KEY	
THE CURSOR CONTROL KEYS	
THE INSERT AND DELETE KEYS	
THE CAPS LOCK KEY	
THE CONTROL AND SCROLL LOCK KEYS	

ATTENTION PCjr OWNERS:

The instructions in our manual are written for the PC keyboard. Section 4 of your "Guide to Operations" manual for the IBM PCjr provides complete information on how to translate PC keystrokes to PCjr keystrokes. Please refer to this section for guidance in following our operating instructions.

TEXT CONVENTIONS

Most of the textual conventions are fairly obvious. Besides the special key symbols and names discussed above, command lines also deserve mention.

The lines set apart from the narrative text are commands that should be typed in exactly as they appear. When two key symbols appear next to each other in such a command line, they should be pressed simultaneously. For example:



means press the Shift key and the Print Screen key simultaneously, thereby printing a copy of the current screen on your printer.

There is one exception to typing in command lines exactly as they appear. When a command includes a word such as "somename" or "programname" or "yourfile", you should, when you enter the command, replace that word (but not any punctuation) with a valid filename of your choice.

TERMINOLOGY

In the preceding section we identified the special key symbols used in this manual, and gave a name to each one. For example:




is called the Enter key. In our instructional narrative, it sometimes makes more sense to refer to a special key by its name than by its symbol. Thus the key names in the preceding section are also special terms for the purposes of this manual. Familiarize yourself with the names to facilitate your use of the manual, and refer to the preceding section as a glossary of key names when necessary.

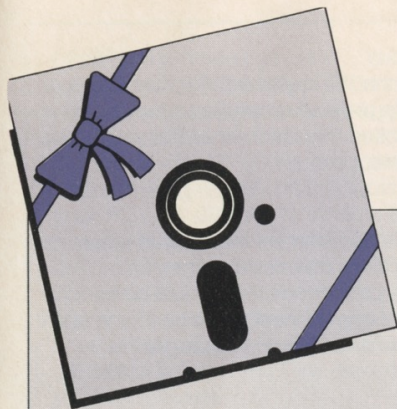
In addition to the key names, a few other terms and phrases which are used in this manual may be unfamiliar to you.

We commonly speak of putting a diskette in the "default drive". This may seem like a needlessly vague phrase. After all, we know a diskette drive always has a one-letter identifier associated with it, so why not refer explicitly to that letter? The problem with using an explicit letter reference is that it can create confusion about what exactly you must do. In other words, operationally it does not matter whether you put the diskette in the A Drive, the B Drive, or even the C Drive (if you have a third diskette drive). What matters is that you put the diskette *in the drive that is currently active*, i.e. the drive whose letter prompt currently appears on the screen. This is your "default drive" because any disk command without a drive letter will look at the diskette in this active drive. So when you put a diskette in the "default drive", you can then issue commands referencing that diskette without the use of letter identifiers.

Every start-up procedure for a BASIC program requires you to "Load Advanced BASIC into your PC". To run a *PC Disk* BASIC program, the BASIC Interpreter must be up and running on your machine—you must be "in BASIC". BASIC is really a program like any other. To start it, you must load it from a disk into your PC and start it running. This is precisely what happens when you put your DOS disk (or any disk with the file BASICA.COM) in the default drive and type:

BASIC 

By so doing you "Load Advanced BASIC into your PC".



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This issue of *PC Disk* has already increased the software library of your IBM Personal Computer. If you haven't subscribed to *PC Disk*, just think of how easy it will be to expand your library with future issues delivered to your door at substantial savings. And if you already are a subscriber, wouldn't you like to share your knowledge with friends and get them gift subscriptions to *PC Disk*?

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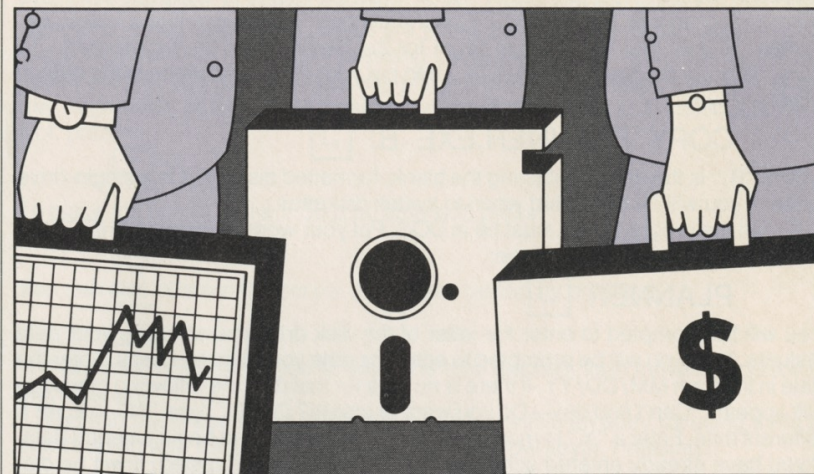
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THE PLANNER

By John Landry and Carlos Abreu

Special Requirements: None

Files Used: PLANNER.EXE

Business people today must remember not only meetings, appointments, luncheons, and dinners, but times, places, attendees, and issues to be discussed. This jumble of information is enough to make your head spin. THE PLANNER alleviates the burden of remembering all these facts by helping you organize your time. Just enter your appointments and activities, then display your schedule for a particular day or week. You can reschedule at the touch of a key or search your schedule for a particular appointment. If you have a printer, you can make hard copies of your schedules. THE PLANNER is the quick and efficient way of making sure you don't miss your important engagements.

PROGRAM STRUCTURE

THE PLANNER has two basic screen displays; one for a daily schedule and one for a weekly summary schedule. All scheduling data is entered, updated, and deleted from the daily schedule display using the ten function keys. Each time you enter or change data, your schedule is automatically updated and saved to disk as soon as you move on to another function. This frees you from continually having to save data.


The program will establish one data file for each month of the year. Each file automatically receives a unique filename to identify the data for a month and a

ZD 202AP

year. The filename consists of a three-letter month abbreviation followed by a two-digit year. The extension is always ".PLN". The months and years used to calculate these filenames come from the dates that you set when entering your data. For example, if you enter a date of 8/23/84, the scheduling information for that day will be listed in the file AUG84.PLN.


START-UP

Before you can use *THE PLANNER*, you must copy the program to a blank, formatted diskette that has enough room for the files created by the program. To copy the program, first boot up DOS. Then put your *PC Disk* diskette in the default drive and type:

COPY PLANNER.EXE B: 

where "B:" is the drive containing the blank, formatted diskette. On a single-drive system, you will be prompted when to switch diskettes.

To run the program, you must be in DOS. Put your working copy of *THE PLANNER* in the default drive and type:

PLANNER 

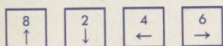
You will be prompted to enter the letter of the disk drive that contains your data diskette. Next you will be prompted to enter the date you wish to access. Enter the date in the form MM/DD/YY. If there is no data for that day, the following message will appear: "Can't find day—Do you want to create? (Y/N)" Type "N" to enter a different date. Enter a "Y" to move on to the Main Screen and begin entering data. If you have already entered schedule data for the date requested, it will be displayed along with the Main Screen.

THE MAIN SCREEN

THE PLANNER's Main Screen displays all your scheduling information for a particular day. This is where all of the program's activity takes place. The day of the week and the date are listed in the upper left corner. The bulk of the Main Screen contains the time of day separated into half-hour increments, beginning at 8:00 a.m. and ending at 5:30 p.m. Each time designation has space for two lines of appointment data, each line holding up to 20 characters. The Main Screen includes an activities list, where you may record your activities or the highlights of the day. You may enter up to eight activities per day, with each activity containing two lines of text of 20 characters each. A command line at the bottom of the screen lists the program's available functions.

ENTERING DATA

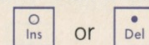
When the Main Screen is displayed, first move the cursor to the desired time slot using the arrow keys listed below.



Then simply type in your appointment for that time period. Follow the same procedure for entering information on the activities list. As you enter your appointment or activity information, type continuously. As you fill the first line, the text will automatically continue on the second line (use spaces to avoid splitting words, if desired). If you try to type past the end of the second line, the computer will warn you with a beep. To indicate that your entry is complete, press the Enter key, and the cursor will return to the beginning of the entry.

While you are making an entry or changing one, certain editing features are available. You can type over the old text or use the arrow keys combined with the Control key to move the cursor around within an entry, leaving current text intact.

Remember, used by themselves, these arrow keys move you between appointments rather than within an appointment. Lastly, you can use:



to insert or delete text respectively. In the insert mode, which is signified by a reverse highlight cursor, whatever character you type will be inserted at that point. Press this key again to turn off the insert mode. The delete key will erase one character each time it is pressed. These are your intra-entry editing facilities.

If you get tired of continually pressing the arrow keys to move the cursor between entries, you can automatically place it at the beginning or the end of the day, regardless of its current location. To place the cursor at the 8:00 a.m. time slot, press:



To place the cursor at the 5:30 p.m. time slot, press:

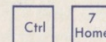


You can also position the cursor at any time period by pressing:

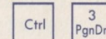


The program will prompt you to enter the time desired, then move the cursor to that location.

You can use these same quick-move actions within an entry by using them in combination with the Control key (just like the arrow keys). Pressing:



moves the cursor to the beginning of an entry while pressing:



moves the cursor to the end of the entry.

TIME TRAVEL

The program provides three options that allow you to see your past, present, and future scheduling data quickly and easily. Activate these options by using the appropriate function keys. When the schedule for a day is displayed, you can move to the next day to view your upcoming appointments by pressing:



To view the previous day, press:



These two options allow you to scroll through your schedule a day at a time. To view a specific day in your schedule without having to scroll forward or backward, press:



Enter the date of the day you wish to view, in the form MM/DD/YY, and the Main Screen will display that day's events.

RESCHEDULING AN APPOINTMENT

If something urgent intervenes and you cannot make a scheduled appointment, you may need to reschedule it on your calendar. The program saves you the trou-

ble of deleting an entry, locating the new day, and then retyping the entry. If you wish to reschedule, position the cursor anywhere in the entry to be moved and press:

F5

The program will prompt you for the date and time on which to reschedule your appointment. If you are moving an item to the activities list, simply enter an "A" instead of the time for that date. After you designate the destination for the appointment, the previous entry will be deleted and moved to the new time period.

If you want to tentatively reschedule an appointment, that is, copy it to a new location without deleting the old entry, press:

F6

Then enter the date and time exactly as you would for the reschedule option described above.

In addition to copying entries, you may also delete them. To delete an appointment from the current display, position the cursor anywhere in the entry to be deleted and press:

F7

You will be prompted to confirm that you wish to delete the entry.

FINDING AN APPOINTMENT

Sometimes you know you have an important appointment but you cannot remember when it is. Rather than having to scan through all your entries, use *THE PLANNER* to search for a particular name or idea and retrieve the lost appointment. To activate the search option, press:

F8

A set of prompts asks you to enter the string of characters you would like to search for and to indicate whether you would like to search backward or forward in time. When the program finds the entry, it will display the schedule for that day. If the first occurrence of the specified character string does not locate the lost appointment, you can continue searching for the same character string in the same chronological direction by pressing:

Ctrl

F8

To search on a different character string, simply press Function key 8 again and proceed as described above.

WEEKLY SUMMARY

An additional feature of *THE PLANNER* enables you to display a summary schedule for an entire week. Press:

F10

to view the schedule for the week containing the day currently displayed. The Weekly Summary lists the time of day on the left-hand side of the display while the days of the week and corresponding dates are listed across the top of the screen. Each time period will have room for one line of text, containing up to nine characters. These nine characters will be taken from the daily entries that you have already made. If your original entry was more than nine characters, the program will truncate the remaining text. So, if you plan on using the Weekly Summary feature often, make sure you include enough identifying information in the first nine characters of your appointment entry.

PRINTING YOUR SCHEDULE

You can easily print your schedule for any day or week. All you have to do is display the day desired, make sure your printer is ready, and press:

F9

You will then be asked if you want to print a full schedule for just this day, or for all days of the week which includes this day.

MAINTAINING YOUR DATA

THE PLANNER can handle your scheduling over any time frame you desire, which means that it can be used indefinitely. However, a single diskette can hold information for only a finite number of months, typically 12, because of the fixed amount of storage space it has available. Therefore, at a certain point you will have to move the oldest months off your work diskette to a history diskette, to make room for your new monthly files. On your work diskette, what you have in effect is a rolling 12 months of scheduling information.

To move old months to a history diskette, first do a directory of your current work diskette to identify the oldest months present. Then use the COPY command in DOS (not in *THE PLANNER*) to copy the file or files from your work diskette to your history diskette. Lastly, use the ERASE command from DOS to remove these files from your work diskette, thereby making room for new files.

These history files can still be accessed by *THE PLANNER*. Start *THE PLANNER* as usual, then put your history diskette in the drive and start with a date falling in the historical range recorded on that diskette.

There are two operating notes that apply to the months available on your work diskette. First, each time you access a date with *THE PLANNER*, the program checks to see if the file for the month containing this date already exists. If it does, the information is retrieved; if not, the program attempts to initialize a file for this month. If there isn't room for this new file, the program will display a message telling you so. At this point, to enter information for the desired month, you must exit *THE PLANNER*, archive some older files as described above, and then restart the program.

Second, the search option of *THE PLANNER* will only look through the files on the diskette in the drive you specified at start-up. Put another way, it only looks through your current schedule of months. To look through historical months, you would have to exit the program, replace your work diskette with your history diskette, then invoke the program again and restart your search.

ABORTING PROGRAM OPERATION

If you wish to abort any program operation in progress, press:

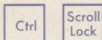
Esc

Execution will cease and you will return to the most recent scheduling display. When there is no operation in progress, press the Escape key to exit the program

PROBLEM HANDLING

There really is not a great deal to say about problem handling with *PC Disk*. If you use this software on the right equipment running the appropriate system software, as outlined in the Technical Preface, you should experience no problems. Nevertheless, a few comments may resolve some more obvious difficulties.

Any BASIC program can be interrupted at any time by pressing:



If you do not see the "Ok" message immediately, indicating that you are back in BASIC, press these keys again. This is a rather drastic but effective way of regaining control of the computer. You won't damage any of the programs in this way, since they're still intact on the diskette. However, you may lose data you entered while the program was running.

If you interrupt a program, you may find that the function keys no longer perform as they had before you started the program. This is because many *PC Disk* programs reset the function keys during execution, then restore the original settings upon completion. An interrupt causes an abnormal termination of a program, so the function keys are not restored. To correct this situation, simply exit from BASIC and then return to BASIC.

You may find at times that the cursor control keys are not working as they should. This is because the keys are not in cursor control mode. The key that switches these keys between numeric mode and cursor control mode is the Num Lock key. So to restore the keys to cursor control mode, press:



If you try to send something to the printer when there is no printer, or when the printer is off or offline, you can hang the system. If the computer does not put out any message, but just remains idle, you will have to say good-bye to whatever you were doing and re-boot your system.

Should you ever find a "bug" in a *PC Disk* program, please do not send back your diskette. Call:

212-503-5330

or write:

PC Disk
Problem Handling
One Park Avenue
New York, NY 10016

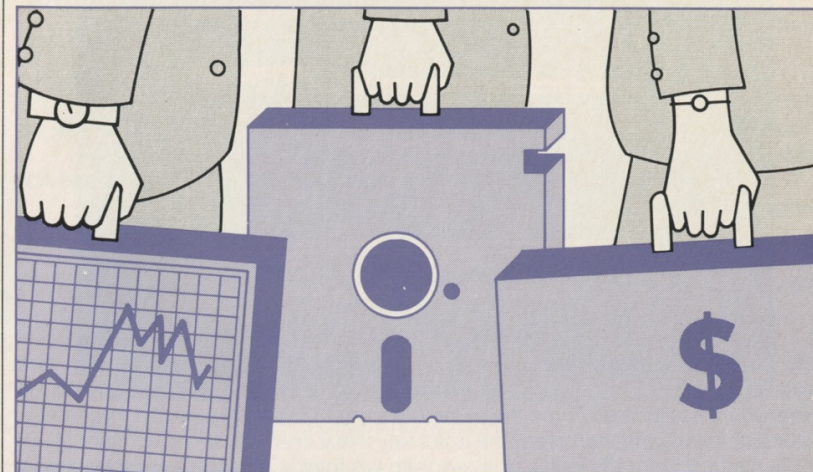
Remember to include your name, address, and telephone number, as well as a thorough description of your system and the problem you have encountered.

If your disk is *physically* damaged, return it, with a note, to:

PC Disk
P.O. Box 5930
Cherry Hill, NJ 08034

Feel free to contact us at any time. In most cases, we can offer a solution to your problem that will save you time and inconvenience.

BUSINESS



NOTE INDEXER

By Alain La Bonte

Special Requirements: None
Files Used: NOTEIND.BAS

Now that you've bought a computer to make life easier, you've discovered that you have access to so much information that your life is no longer easy. What you need is a quick and efficient way to organize that information—a program that will allow you to store, edit, and cross-reference a large quantity of textual data. NOTE INDEXER is the answer to your problem.

NOTE INDEXER allows you to create files of electronic index cards which contain textual information and which may be referenced by their labels, keywords, or card numbers. The program can then search on keywords to cross-reference and index information. Once you enter a reference into a file, all you have to do is enter its keyword on the Display Screen, and that reference, along with any other reference containing that keyword, will be displayed on your monitor. NOTE INDEXER is the perfect way to keep track of business ideas, sales notes, reading notes, or any other information that you want to access by a particular topical word.


BACKGROUND

NOTE INDEXER is a data base program designed to manage small or medium-sized amounts of information. In order to access this information, the program performs a simple keyword or key number search. The user creates these keywords and must designate them as such, each time they are used, by enclosing them in accent grave marks (`). All such keywords can then be used as an index to your cards, allowing you to retrieve quickly all the information relevant to

topic at hand. The program allows you to create multiple card files so you can separate your reading notes from sales notes, idea notes from shipping notes, etc.


START-UP

Before running *NOTE INDEXER*, transfer the necessary files from your *PC Disk* diskette onto a separate blank, formatted diskette that has room for the additional files the program creates. To make the copy, you must be in DOS. Then put your work copy of your *PC Disk* diskette in the default drive and type:


COPY NOTEIND.BAS B: 

where "B:" is the destination drive containing your blank diskette (on a single-drive system, DOS will prompt you to swap in your destination work diskette for each COPY command).

To start *NOTE INDEXER*, insert a system disk in your default drive and load Advanced BASIC into your PC by typing:

BASICA 

Then place your work copy of *NOTE INDEXER* in the default drive and type:

RUN "NOTEIND" 

After the Title Screen appears, the program proceeds to the Loading Screen. The program prompts you to input the name of the card file you wish to use and the drive where it is located. Type the name (up to eight characters plus a three-character extension) and then press the Enter key. Next enter the drive indicator (A, B, or C). If this file already exists, the program will load it. If you are creating a new file, the program will prompt you to verify that you wish to create it. The program then displays the five-option Main Menu.

NOTE INDEXER's Main Menu lists the various functions the program performs. You may create cards, list the index words for your cards, load a new card file, print out cards by file, label, or keyword, or you may exit the program.

CREATING CARDS

The first option on the Main Menu allows you to create, display, or edit your reference cards. Choose this option by entering:

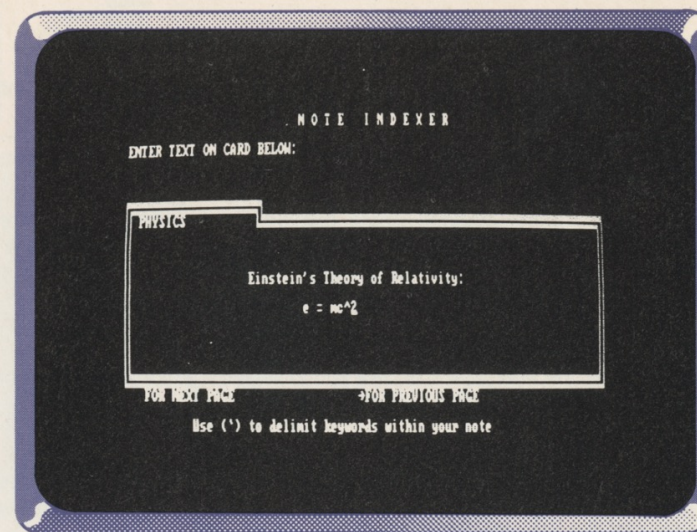
C

The Create/Display/Edit Screen will appear with a command line listing the options to create a new reference card, display or edit an existing reference card, or return to the Main Menu. To create a new reference card, press:

C

The program prompts you to type in a label for your card. The label you use for a card is automatically a keyword and can be considered its major keyword. Cards can be retrieved by label alone or by any of the minor keywords you identify in the text of the card itself. When you have entered this information, press the Enter key. The program then prompts you to enter the text. You may include as many keywords as you like in the text of your record, but make sure they are denoted by accent grave marks, i.e., 'keyword'. If you wish to put blank lines in the middle of a reference card, move the cursor down by using the cursor control (arrow) keys, not the Enter key. When you have entered all of the text for a particular card, press the Enter key. The program then saves that individual reference card. You may continue to add reference cards by choosing the Create option from the Create/Edit Screen.

DISPLAYING CARDS



Gain easy access to important information

To view the information contained in your cards, press:

D



from the Create/Display/Edit Screen. You can now choose to display a single card (indicated by card number), all the cards of a particular label, all the cards with a particular keyword, or all reference cards. This display option is valuable for accessing information concerning a particular subject or idea. For example, if you wanted to display all the data contained in those cards labeled "computers", you would choose to display cards by label, then enter 'computers' as your label. All the references you have labeled in this manner, whether they concern software suppliers, computer publications, etc., will then be displayed in succession. You can also use the DOS wild card (*) when specifying a keyword or label. For example, to find all cards whose labels begin with COMP, you would enter the label COMP*.

EDITING CARDS

After displaying your cards, you may decide to make some changes. Enter the editing mode by pressing:

E

from the Create/Display/Edit Screen. You must first indicate the number of the card you would like to change (find the number by displaying all of the cards). When the card is displayed, the cursor appears on the first character of the label. The card can now be edited with the same facilities available in the card creation mode. You can type over existing text, or use the four cursor control keys (arrow keys) to move around the card without overwriting any characters. You can also press:

 **7 Home** OR  **3 PgnDn**

to move the cursor directly to the label, or the end of your card's text, respectively. Press:



to begin inserting (versus overwriting) text in the card. Press it again to turn off the insertion mode. To delete a character, press:



Once you have made your changes, press the Enter key and the card will be saved. You then have the choice to create, display, or edit another card, or return to the Main Menu. Once the changes have been made, you may save the new version of your card and continue to edit, or you can create a new card, display cards, or return to the Main Menu.

LISTING THE INDEX

The next option on the Main Menu allows you to list information about your cards so that you can easily identify them. Press:

L

to list the label, keyword, the first line, and the number of each card in the currently loaded file. If you have several cards in a file, the screen will not be able to display it all at once. To see the previous page of text, press:



To move on to the next page of text, press:



Return to the Main Menu by pressing:



PRINTING RECORDS

If you have a printer, you may print your reference cards. There are three printing choices: you may print all of the cards under a certain label, all of the cards containing a certain keyword, or all of the cards in the currently loaded file. Just enter "L", "K", or "A", respectively, to indicate your choice.

LOADING FILES

To load an existing file of reference cards, press:

N

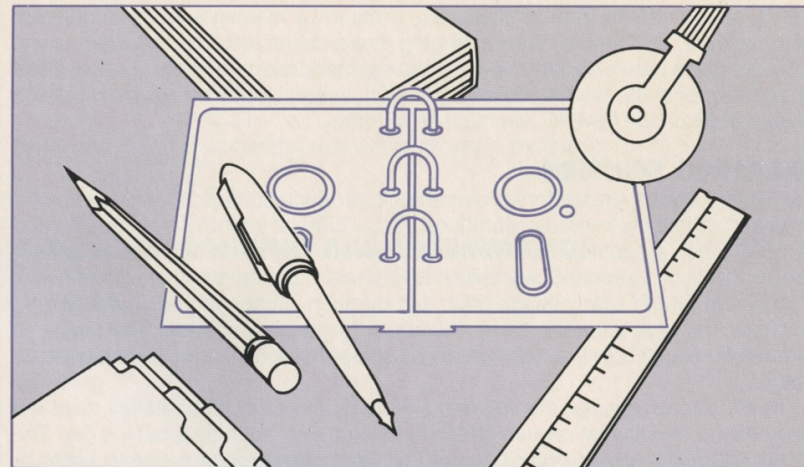
at the Main Menu. The program will prompt you for the file to be used and the drive where this file is located. Again, if the file exists, it will be loaded. If it does not, you may choose to create it.

EXITING

The final option on *NOTE INDEXER*'s Main Menu allows you to exit the program. Just press:

E

from the Main Menu and your system will return to Advanced BASIC.



SOUND TUTOR

By Stan W. Merrill

Special Requirements: None

Files Used: TUTOR.BAS

To keep your intellectual wheels turning, we offer you SOUND TUTOR, an instructional guide that will help you create sound effects in your BASIC programs. This tutorial demonstrates and explains the code behind the BASIC programming operations used to generate sound effects. Our intent is to expand your programming knowledge so that you can begin writing your own BASIC programs or fine-tune your existing code.

The focus of this feature, sound effects, may be broadly defined as all uses of sound except music. While the sounds that can be created through your PC will not rival those of the New York Philharmonic, they can be useful tools to enhance BASIC programs.

BACKGROUND

To understand how to produce sound effects, we must remember that sound is created by a series of vibrations. The human ear can detect vibrations or sounds that occur in the range of 20 cycles per second to, at most, 20,000 cycles per second. (The technical term for cycles per second is hertz, abbreviated Hz.) Higher frequencies sound higher in "pitch". Most people hear only a portion of these pitches; few can hear the full range.

Aside from pitch, sounds vary in loudness, duration, and timbre. Loudness and duration are familiar concepts, though they are somewhat subjective. "Timbre" refers to the quality of a sound—how "smooth" or "rough" we perceive it to be.

This perception arises from the many higher and softer pitches, called overtones, that you hear along with the fundamental sound.

"Pure" sounds of a single pitch, loudness, and timbre seldom occur outside the world of electronic synthesis. Naturally-occurring sounds change pitch, loudness, and timbre over their duration. The characteristics of these changes distinguish one sound from another.

These four attributes (pitch, volume, duration, and timbre) are the basis for generating sound effects. Sound effects are created by making sounds of different pitch, volume, and timbre, then changing these characteristics in certain ways. For example, a parakeet may make a chirping sound by starting out at about 2600 hz and dropping the pitch to about 2200 hz in several quick steps. To achieve a similar effect on the IBM PC, we must do likewise.

CREATING SOUNDS

The IBM PC uses a straightforward method to produce sounds: it turns the speaker on and off rapidly to create vibrations. For a 2500 hz sound, it switches on and off 2500 times a second. The PC controls duration by deciding how many seconds or parts of a second it will switch the speaker on and off.


While the IBM PC can change pitch and duration, it cannot change the timbre, because it always uses the same method of producing sounds. The timbre is somewhat "rough", as you can hear if you compare it to the same pitch played by a flute.

The PC cannot change the volume, either. This inability immediately rules out many sound effects that require changes in loudness, such as a baby's cry. The PC also allows only one tone or "voice" at a time. That makes it next to impossible, for example, to closely simulate an explosion which consists of several simultaneous sounds.


Within the restrictions of the machine, we can create sound effects by using three fundamental skills. The first is to understand and analyze the sound you want to make. Next, you must know which programming language statements are useful for creating sounds. Finally, you must provide the information (data) the program needs to make the effect. We'll look at four methods of making sound effects: immediate data, generated data, step loops, and DATA statements.

START-UP



To start *SOUND TUTOR*, insert a system disk in your default drive and load Advanced BASIC into your PC by typing:

BASICA 


Then insert your work copy of your *PC Disk* diskette into your default drive and type:

RUN "TUTOR" 

The program begins by displaying a representation of the ten function keys of the IBM PC. Each key is labeled with the sound that you will hear if you press that key. After you experiment with the sound effects of *SOUND TUTOR*, you will want to see the programming code used to create them. There are two ways of doing this: you can either display the code directly on the screen or print out the entire program for easy reference. To view the code on your monitor, press the Alt key and the desired function key simultaneously. For example, to view the code used to generate a beep, simultaneously press:


Doing so will return you to BASIC and display the code that is implemented when you press Function key 1. To resume the program and continue experimenting with the other sound effects, type:

RUN 


If you would like to have a hard copy of the program, exit to Advanced BASIC by pressing:



Then make sure your printer is ready and type:

LLIST 

When the listing is complete, restart the program by typing:



RUN 

SOUND-PRODUCING BASIC COMMANDS


The easiest sound to make on the IBM PC is a beep. Press:





for an example. Look at the code which generates this sound by simultaneously pressing:

As you can see, there is a statement in Advanced BASIC called BEEP that makes the sound. This is a redundant (though useful) statement, since there are other ways to make the same sound. Three other BASIC sequences that can be used are:

PRINT CHR\$(7) 

SOUND 800, 5 

PLAY "O3 G" 

The beep can also be generated by using the OUT statement. This statement will turn the speaker on and off per your instructions, but its use is rather complex and is better discussed later on in this feature.

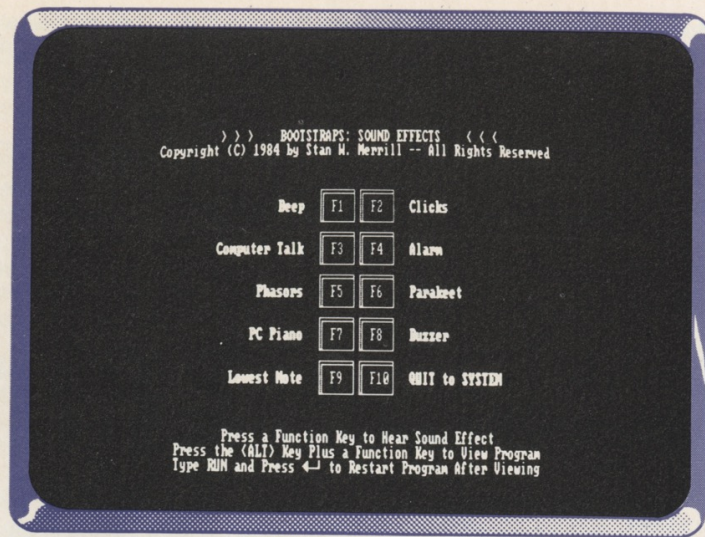
While the PLAY statement can be used for sound effects, it is used much more often in music, where tones follow a scale. Since our focus here is sound effects, we will not discuss the PLAY command in detail, but only as it bears on effects. The BEEP and PRINT CHR\$(7) statements produce only one sound and cannot be made to produce others.

The SOUND statement is the most versatile of all the above sequences. Its format is as follows:

SOUND x,y

where "x" stands for the frequency (number of vibrations per second) and "y" is the duration (number of clock ticks). The frequency is stated in hertz or vibrations per second, and the duration is in clock ticks. The clock on the IBM PC ticks 18.2 times a second, so to make a sound last one second, the duration would be 18.2. For example, to play an A note (440 hertz) for one second, you would type:

SOUND 440, 18.2



The Main Menu of sound effects

While beeping effectively notifies a user of a situation that requires attention, its penetrating blare can be annoying. Clicks are a useful alternative when you want to provide ongoing feedback about a program's operation. To hear some clicks, press:

F2

When you look at the code used to generate the clicking sounds, you will see that this SOUND statement is similar to the one used to make a beep, except that it actually makes a sound too high to hear. Remember that the human ear can hear vibrations up to 20,000 hz. Yet this statement makes a 30,000 hz sound and you still hear something. The reason for this is that even as the SOUND statement plays an inaudible note, it turns the speaker on and off. As the speaker is turned on and off, it makes the clicking sound that you hear. Sounds within the range of hearing usually mask the clicking so you don't notice it, but when you use a SOUND statement with a frequency beyond hearing range, you will produce audible clicking sounds.

COMPUTER TALK: GENERATING DATA FOR THE SOUND STATEMENT

You can make a sound of a specific frequency and duration by coding constants directly into the SOUND statement, as we did with beeps and clicks. This technique is sometimes called using "immediate data" because the data immediately follows the command.

Using immediate data doesn't always suffice. Another way is to have the program generate the frequency or duration, or both. The algorithm you use can be based on any mathematical function that will generate a frequency number within the audible range; the sonic effect depends on the function. In our example, we use a random number function to produce "computer talk". From the Main Screen, press:

F3

to hear computer talk. To see the code used to generate this sound, simultaneously press:

Alt F3

The function in line 2140 creates a random number between 60 and 2060. This number is placed in the SOUND statement as the frequency. The frequency is given a rather brief duration of 0.6 clock ticks. By repeating the process 35 times, we can create electronic chatter.

You can create different sounds by varying the function used. For example, return to BASIC and type in a new line 2140 using the following function:

2140 FREQ = (85 * (ABS(COS(FREQ)))) + 37

Then run the program by typing:

RUN

Next press:

F3

The sound is now something similar to a car engine that won't turn over. The 37 at the end keeps the frequency from falling below the minimum permitted by the SOUND statement. For other effects, try functions that replace duration, or both frequency and duration.

USING STEP LOOPS: ALARMS, PHASORS, AND PARAKEETS

Two other choices available are the alarm (Function key 4) and the phasors (Function key 5). To hear the alarm, press:

F4

To view the code used to generate this sound, simultaneously press:

Alt F4

Note that a FOR-NEXT loop is used to produce the values for frequency. In the FOR part of the loop, we choose a starting frequency (500 hz) and an ending one (1400 hz). Then we use the NEXT statement to choose the increment, or step, by which to go from start to end (20 hz). The duration is specified in the SOUND statement, in this case .35.

When using a step loop to create sound, you must be aware of these four critical values (starting pitch, ending pitch, step, and duration). Varying any one of them will change the effect. Unfortunately, sound is too complex to allow us to use a formula for varying them that will produce a particular desired sound. Trial and error are your best tools for creating a variety of sound effects.

For an example of how varying these four values can produce entirely different sound effects, run the *SOUND TUTOR* program again and press:

F5

to hear the simulated phasors. When you look at the code, you will see that the phasors subroutine uses a larger step than the alarm program, but in the opposite direction. It also uses different starting and ending values and a shorter duration. Otherwise, it is the same as the alarm procedure.

A more involved sample of this technology is the parakeet sound effect, which you can hear by pressing:

F6

The code for this sequence consists of two sets of loops, both of which have other loops nested within them. Another delay loop separates the two main loops with a brief pause. It is called as a subroutine.

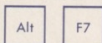
THE PC PIANO

Pressing Function key 7 from the Main Menu transforms your computer into a simulated piano keyboard. At the bottom of the Piano Screen, a chart displays the 32 keys which you can use to generate musical notes. The computer plays four separate scales in the key of C, which means that the eight notes C, D, E, F, G, A, B, and C can be played four separate times in four different octaves.

For typing ease, the keys corresponding to the tones are not arranged consecutively on the keyboard. Instead, the arrangement corresponds to a typewriter's "home keys" (the keys upon which you are taught to rest your fingers when learning to type). Thus, one of the octaves consists of the letters "A", "S", "D", "F", "J", "K", "L", and ";", omitting the "G" and "H" keys. Similarly, the highest octave ascends from the "1" key to the "0" key but omits the "5" and "6" keys. Since each row of keys on the keyboard plays one octave, the lowest note on PC Piano is the "Z" key and the highest is the "0" key.

As you press the various keys, the frequency (in cycles per second, or hz) for each of the tones will appear on the Piano Screen. These legends appear one at a time, in a location roughly corresponding to the note's pitch. (The higher the tone, the farther up it appears on the screen.) If you press the same key several times in succession, the tone will sound repeatedly and the corresponding legend will recur on the screen.

This programming method provides data for the SOUND statement by using the BASIC DATA and READ statements. Simultaneously press:



to see the code that creates the PC Piano. This subroutine uses a series of DATA statements to represent the notes the piano can play. DATA statements are useful when you want precise control over the duration and frequency of each element of the sound.

This subroutine sets up an array, NOTE\$, that contains the frequencies (data) available on the piano. An array can be loosely defined as a series of items arranged in a meaningful pattern. In this case, we have set up an array containing a series of frequencies and arranged them to roughly correspond to a piano keyboard. When a key is pressed, the code performs a binary search of the array, locates the frequency of the note to be played, passes the signal on to the speaker, and flashes the frequency on the screen.

ADVANCED TECHNIQUES

The buzzer and lowest note sound effects use a technique that requires some knowledge of the PC's hardware. As mentioned earlier, the PC makes sounds by turning a speaker on and off many times a second. It can do so in one of two ways: under direct control of the 8088 central processing unit (CPU) or with the help of a timer.

The speaker is connected to the CPU through one of the 8088's I/O (input/output) ports. A port is similar to a memory location, except that it is dedicated specifically to I/O tasks. The computer assigns each port a number or "address", just as it does for each memory location. To send something to a port, you

specify its address in the BASIC OUT statement, along with the byte of information you want to send. For example, the command:

OUT 97,1

will send a 1 to port 97.

The speaker is connected to port 97. To turn it on, you send it a 2. To switch it off, you send it a 0. However, there are other devices connected to port 97. Among these are the cassette motor, a timer, and important memory and keyboard signals. Since they may be functioning at the same time as the speaker, you must be careful not to disturb them when you switch the speaker on and off.

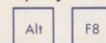
Each bit of the signal you send to port 97 controls one of the devices. To keep from disturbing the wrong devices, you must first find out how their bits are set, then turn on or off only the speaker bit (the second bit from the right) without changing the remaining bits.

To see how this technique may be implemented, press:



to hear a buzzing sound. This is the fastest vibration Advanced BASIC can make using this technique. Advanced BASIC takes so long to translate its own code that it can only switch the speaker on and off about 50 times a second. This slowness is a major obstacle in creating sound effects with Advanced BASIC in any interpreted language.

Now display the code used to generate the buzzer by simultaneously pressing:



Line 2830 first determines the present status of the devices connected to the speaker port. (The speaker port is 97. The constants used here are defined in lines 90-140.) Line 2850 switches on just bit 2 by ORing the status with 2. The next line sends the new byte out the speaker port.

Line 2870 switches bit 2 off and the next line sends the "off" byte out the speaker port. This process of switching on and off is repeated 60 times to provide enough time for us to listen to it.

USING THE TIMER

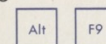
While the technique used for buzzing isn't the best method of generating sound in a BASIC program, it helps us understand and use a second method for directly controlling the speaker: the timer. This device can be used to determine how often to switch the speaker on and off instead of having the CPU count it out. With this method, the computer can set the timer with the frequency it wants played. Then the CPU can switch on the speaker, perform other tasks, and return later to switch off the speaker. Meanwhile, the timer turns the speaker on and off at the rate commanded by the CPU.

To see how this works, press:



The speaker will remain on, playing the lowest note the timer can generate, which is about 18 hz. When you press any key, the CPU will switch the speaker off completely.

Once you've heard the lowest note, display the code by simultaneously pressing:



This code is similar to that used to generate the buzzer except that it first loads the timer, through port 255, with two bytes of information that signal the frequency to play. This routine then switches the timer on at the same time that it switches the speaker on.

To load the timer with a frequency, you send two bytes OUT the timer port (port 66). To determine what the bytes should be, follow this procedure:

1. There is a "clock" used by the timer that ticks 1,193,180 times a second. To find out the number that must be loaded into the timer, divide 1,193,180 by the frequency you want. For example, to get a frequency of 800 hertz, divide 1,193,180 by 800 to get 1491.475. You can only use whole numbers, so truncate it to 1491.
2. If the number obtained in step 1 is less than 256, then place the number in line 2960 and change the number in line 2970 to zero. Otherwise, subtract 255 from the number. Then put the number 255 in line 2960. The number in line 2970 should be the remainder divided by 256.

For example, since 1491 is larger than 256, the number in line 2960 should equal 255. The number in line 2970 should equal $(1491 - 255)/256$ or 4.82, which rounded to the nearest integer is 5.

Once the timer is loaded, you must switch it on when you switch on the speaker. This is easy to do because the timer switch is the first bit of the same port used to switch on the speaker. You switch it on by ORing the first bit of port 97 with 1 and switch it off by ANDing the first bit with 252. This procedure is performed in lines 3000 and 3070 along with the constant definitions in lines 120 and 130.

This technique is useful for switching on the speaker and leaving it on while the program continues to execute. Another way to provide such "background" sound is to insert the statement:

PLAY "MB"

into the program. Any SOUND or PLAY statements executed after this statement will continue to play for the duration specified while the program continues. The statement:

PLAY "MF"

will turn off background sound and return the program to standard execution.

EXITING

If you wish to end *SOUND TUTOR*, return to the Main Menu and press:

F10

and the system will return to DOS.

SUBSCRIPTION INQUIRIES

If you have any questions regarding subscriptions, or you would like to renew your subscription or order back issues, call:

800-932-0017

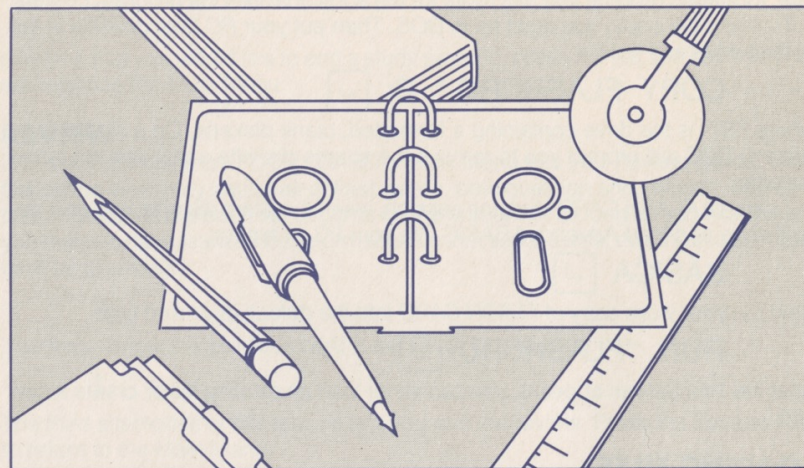
in NJ 800-624-0497

or write:

PC Disk

P.O. Box 5930

Cherry Hill, NJ 08034



FLASH CARD

By Michael Miller

Programmed By Evelyn Leon

Special Requirements: None

Files Used: FLASHCRD.BAS

FLASHCRD.FLS

The paradox of studying from notes or books is that you can't formulate a question to ask yourself without accidentally reading the answer. FLASH CARD allows you to create quiz cards to help you with these solitary study drills. No longer will you have to impose upon a friend to quiz you. The program's applications are endless because you can make flash cards containing information on whatever subject you need to study, from history to biology to math to foreign languages. Whether you need to brush up on a subject for an examination or you are just interested in learning something new, you will see that FLASH CARD is no flash in the pan.

BACKGROUND


FLASH CARD is designed to give you all the benefits of flash card study. Each card may contain up to 176 characters, and the number of cards per file is limited to 200. As with paper index cards, each card has two "sides", one presenting the question or problem, and the other giving the answer or solution. On the computer screen, the question will always appear on the card at the top of the screen, and the answer will appear on the bottom card. After you choose the file of flash cards, the program displays the questions, one at a time, and gives you as much time as

necessary to answer them. You can study for as long as you like before proceeding to the next card.

START-UP


FLASH CARD comes with its own sample file, but since you can create additional files, you must transfer the program files from your *PC Disk* diskette onto a separate, formatted diskette that has room for the additional files the program creates.

To make the copy, you must be in DOS. Then put your *PC Disk* diskette in the default drive and type:


COPY FLASHCRD.* B: 

where "B:" is the drive containing a formatted, blank diskette. On a single-drive system, DOS will prompt you to remove the source diskette and insert the target diskette.

To start a *FLASH CARD* studying session, insert a system diskette into your default drive and load Advanced BASIC into your PC by typing:

BASICA 

Next put your work copy of *FLASH CARD* into the default drive and type:

RUN "FLASHCRD" 


After the Title Screen appears, you can either load an existing file or create a new one.

LOADING FILES

The first time you run the program, the only available file to load is the sample file, *FLASHCRD.FLS*. After the Title Screen is cleared, choose to Load a File by typing:

L

The program will display the name of the available file(s). After you have used *FLASH CARD* to create your own flash card files, the new filenames will be listed in addition to the sample file. Designate the file you wish to load by typing in its filename. The program then displays the Main Menu. For starters, load the sample file by typing:

FLASHCRD 

A STUDY SESSION

Once you have loaded an existing file or you have finished creating a file, the five-option Main Menu appears. Your options are to Study Cards, Review Cards, Add Cards, Edit Cards, Delete Cards, and Print Cards. We'll discuss the study and review actions first, which you can follow with the sample file you've just loaded. We will then discuss the card maintenance actions and the procedure for creating your own card file.

The Study Cards option lets you study a subject for which there exists a file of cards. For each study session, you can choose either to view the questions and guess the answers or study the answers and try to recall the questions. A third option gives you a mixture of questions and answers. Select one of the three choices by pressing "Q", "A", or "V", respectively.

The screen will then show two cards; one contains the question or problem and the other is blank. If you have chosen to view a question, it will appear in the top card and the bottom card will be blank. If instead you are trying to guess what the

question is by looking at the answer, then the top card will be blank and the bottom card will display the answer. After studying the displayed information and determining the answer, press:

S

and the program will display the solution. To proceed to the next card, press:

N

Any time that you would like to end a study session, press the Escape key and you will return to the Main Menu.

REVIEW

The second choice on *FLASH CARD*'s Main Menu lets you Review Cards. Use this option to display each pair of flash cards, both question and solution, one at a time. You can leave each set of cards on the screen for as long as you like. When you feel you have learned the information on that set of cards, advance to the next card by pressing:

N

You may review the previous card (Last Card) by pressing:

L

The third alternative of this feature lets you end the review. Press the Escape key to return to the Main Menu.

CREATING CARDS



To prepare your own flash cards, you must first create a new file. After the Title Screen is cleared, choose the Create New File option by typing "C". The program asks for a name for this new file and then the outlines of the cards appear. When entering your questions and answers, type continuously. As you fill in the first line, the text will automatically continue on the second line (use spaces to avoid splitting words, if desired). You may enter four lines of text each containing up to 44 characters. If you try to type past the end of the fourth line, the computer will warn you with a beep. To switch between the question and answer cards, press the Enter key. To complete your entry, press:



and you will be prompted to confirm that you wish to go on to a new card pair.

While you are creating or changing an entry, certain editing features are available. You can type over the old text or use the arrow keys (→, ←, ↓, ↑) to move the cursor around within a card, leaving the current text intact.

To insert or delete text, use:

 or 

In the insert mode, which is distinguished by a reverse highlight cursor, the program will insert whatever character you type. Press the insert key again to turn off the insert mode. The delete key will erase one character each time you press it.

Add cards until your file is complete, then exit the create mode by pressing:



The file you have just created will be the one currently loaded.

UPDATING YOUR CARDS

If you forgot to include a particular question or problem in your flash card file, you can insert it by using the Add Cards option on the program's Main Menu. Press:

A

then enter the question and answer following the same procedure described in "Creating Cards".

Another way to update your flash card file is to weed out those questions that you have mastered or that are no longer applicable to your studying needs. The next option on the Main Menu allows you to delete cards from the file that is currently loaded. Choose this option from the Main Menu by pressing "D". The program will ask if you wish to delete a whole stack of cards or individual cards. If you indicate that you wish to delete a whole stack, the program deletes the file of cards that is currently loaded. You can then load a new filename for another study session or exit to BASIC. If you wish to delete individual cards, the program asks you to enter the number of the card to be deleted. This number is centered at the top of each card pair. Delete this card pair by pressing "D" when the card pair is displayed on the screen. Pressing "N" displays the next card pair, while pressing "L" displays the past. You may delete a whole series of cards by pressing "N" to display the next card and then deleting them by pressing "D". Alternatively, you can enter a card number, rather than "N" or "L", to select another card to delete. When you have finished deleting cards, return to the Main Menu by pressing:

Esc

The Edit Card option from the Main Menu enables you to make changes to existing cards. To invoke this option, press:

E

from the Main Menu. You will then be prompted for the number of the card pair to edit. Enter the number, and that card pair will be displayed, with the cursor positioned at the beginning of the question card. The same editing facilities applying to card creation are available here. When the card pair is altered to your satisfaction, press:

F1

and confirm your entry. You can then press "N" or "L" to go to the next card pair or previous pair for editing, enter another card pair number, or press:

Esc

to return to the Main Menu.

To obtain a printout of all the cards in the currently active file, press:

P

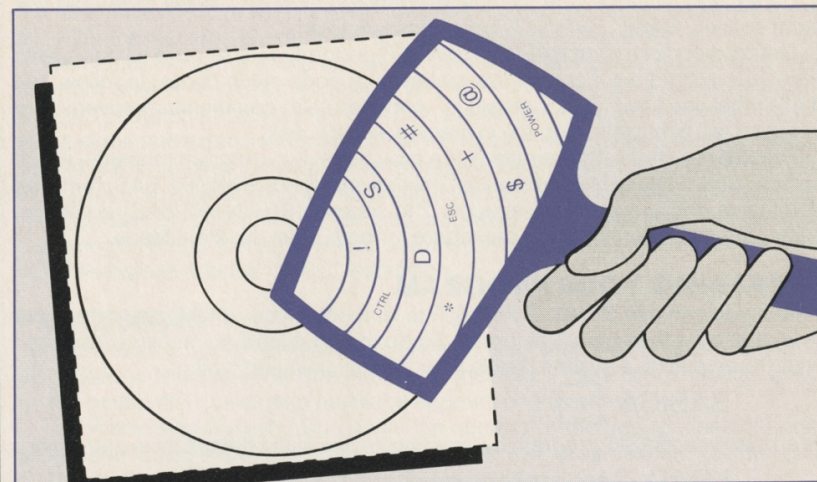
from the Main Menu.

EXITING

You may exit the program and return to Advanced BASIC from the Main Menu by pressing:

Esc

At this point you may load another file to begin a new study session or exit the program. Enter your choice and you will either be prompted to enter a new filename or you will return to Advanced BASIC.



BASIC SHRINKER

By Professional Microware Ltd.

Special Requirements: None
Files Used: SHRINKER.BAS
SHRINKR1.BAS
SHRINKR2.BAS

Everyone who has done any BASIC programming has probably encountered a problem with space on the disk. Imagine that you have just finished writing a program that executes beautifully. You should be content but there is one problem: your program is huge and the run-time seems endless. You do not want to shorten your program by sacrificing one of its valuable routines, but there seems to be no alternative. For this problem, you need BASIC SHRINKER.

BACKGROUND

BASIC SHRINKER is designed to reduce the size of any program written in IBM BASIC or Advanced BASIC. The resulting program is a compact version of your BASIC program that uses less memory and runs faster than the original program.

The general idea behind the **BASIC SHRINKER** program is to provide you with two versions of your BASIC programs. The original, your "unshrunk" version, is easily understandable because the code is spread out, but it is slow in execution. The "shrunk" version is less legible because lines are strung together, but it is faster to execute and requires less memory. You can keep one copy of each version to suit whatever your needs are in a particular situation.

BASIC SHRINKER decreases the size of programs in three ways. First of all, it combines as many statements as possible on a single line. If you originally wrote your program in the more understandable format of one BASIC statement per line,

you can now shrink the program to take advantage of the speed increase which results when *BASIC SHRINKER* squeezes the code. The format of the program allows you to place up to 255 characters on a single line.


The second way that *BASIC SHRINKER* reduces the size of your programs is to eliminate any unnecessary spaces. When you wrote your program, you may have found it easier to leave additional spaces on certain lines to make the logic more apparent. For instance, you may have indented FOR-NEXT loops. If you did use extra spaces, *BASIC SHRINKER* can eliminate them.

The third compression *BASIC SHRINKER* performs is to remove all comments from your program. Of course this makes your code much harder to follow, but that's what you keep your "unshrunk" copy for. With comments removed, your program will occupy less space in memory and on disk.


These three shrinking operations are grouped in two program modules, which can be used singly or in combination. The first module (SHRINKR1.BAS) removes comments and unnecessary spaces. The second (SHRINKR2.BAS) combines lines. Choose either shrinking procedure, or both, from the Main Menu.

PREPARING YOUR PROGRAM


Before you can use *BASIC SHRINKER* to slim down your BASIC programs, you must first save them in ASCII format. To do this, first load Advanced BASIC into your PC by putting a system disk in your default drive and typing:

BASICA 

Then load your BASIC program by inserting its disk in the default drive and typing:

LOAD "programname" 


Finally, save this as an ASCII file by typing:

SAVE "programname",A 


For further information on saving programs in ASCII format, consult your IBM BASIC manual (Chapter 4, the SAVE command).

START-UP


To put *BASIC SHRINKER* to work on your programs, copy it to the disk where your BASIC files reside. To do this, your PC must be in DOS. Then insert your *PC Disk* diskette in the default drive and type:

COPY SHRINK*.BAS B: 

where "B:" is the drive containing your BASIC program to be shrunk. On a single-drive system, you will be prompted when to replace your *PC Disk* diskette with your program diskette. Then insert a disk containing Advanced BASIC into your default drive and load it by typing:

BASICA 

Insert your work copy of *BASIC SHRINKER* in the default drive and type:

RUN "SHRINK" 

The Title Screen appears first, followed by a brief Introductory Screen.

BASIC SHRINKER's Main Menu has four options. These allow you to 1) combine statements on a line, 2) eliminate unnecessary spaces, 3) perform both of these reduction methods, or 4) exit the program. If you choose the fourth option, you will be returned to DOS. After you choose option 1, 2, or 3, the program prompts you to type in the name of the input file. The input file is the original ver-

sion of your BASIC program that has been saved in ASCII format. If you try to enter the name of a file that has not been saved in ASCII format, the program warns you that the file must be saved appropriately before processing can take place. If the filename you enter has no extension, *BASIC SHRINKER* assumes ".SRC" by default. The program displays an error message if you enter a non-existent filename.

If you are working with a two-drive system where *BASIC SHRINKER* is loaded in the default drive (drive A) and your input file is loaded on the second drive (drive B), enter the filename preceded by a drive letter (e.g. B:filename).

Next enter the name of the output file. This is the name you wish to give your program after it has been shrunk. If you do not specify an extension, *BASIC SHRINKER* automatically adds ".ASC" to the filename. Be careful not to use the same name and extension for the output file as for the input file. If you do, the output file will write over the input file and you will lose your original, unshrunk version. (You can always reshrink an original version of a program, but it is a lot of work to manually unshrink a condensed program.) If you press the Enter key without typing an output filename, *BASIC SHRINKER* will use the same filename as the input file but will add the ".ASC" extension.


PROCESSING

The Processing Screen displays each line number which is being processed. It also displays the amount of free memory remaining; if there is not enough space on the output disk, a warning message appears on this screen.


The Processing Screen also counts the number of records (or lines of code) processed. If you know how many lines of code your program has, you can estimate how many more lines remain to be processed.

CHANGING THE FORMAT

BASIC SHRINKER writes the condensed version of your program to disk in ASCII format. To gain additional speed, you can resave the program in compressed binary format. To do this, simply use the SAVE command. For instance, if you wished to resave the shrunken "filename.ASC", you would load Advanced BASIC, then load your program by typing:

LOAD "filename.ASC" 

Next type:

SAVE "filename" 

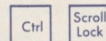
If you do not indicate an extension, the system supplies the default of ".BAS".

ERROR HANDLING

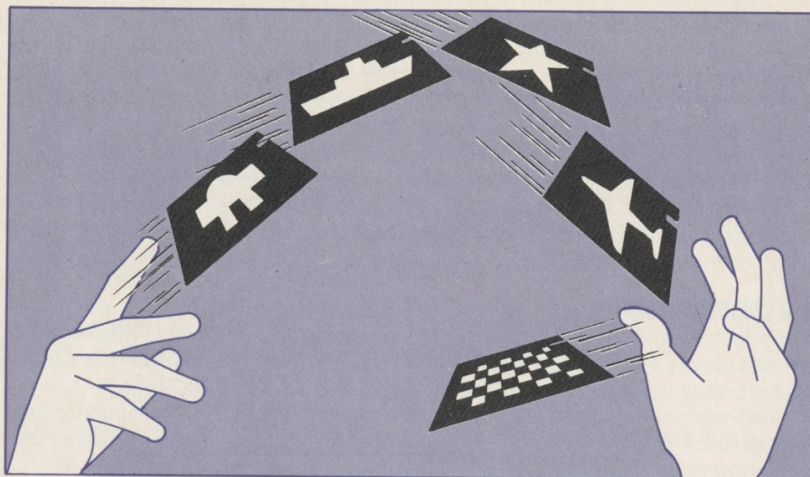
If you have a syntax or logic error in your original program, it will also appear in the new shorter version. It may also be possible that a syntax or logic error that was not in the original program may appear in the condensed version. If this occurs, check whether the "unshrunk" version has any branching to comment lines, for instance by a GOSUB statement. If it does, then the error occurred because the comment lines were eliminated during the shrinking process. To fix this, change the line references in the original version so that they refer to the first line following the comment line, and then shrink the program again.

EXITING

If at any time during execution you wish to stop, simultaneously press:



The program stops processing and returns you to DOS.



POLITICAL PURSUITS

By Phil W. Brashear and Richard G. Vance

Special Requirements: None
Files Used: POL.BAS

It is September 3, the convention is over, and November is just two months away. You remember the excitement of that night when every delegate from every state in the Union chanted your name. Now it's up to you and your campaign staff to take this promise of a bright future and make it reality.

Just 15 months ago you announced that you would not be running for the party's nomination. The people of New Hampshire didn't particularly miss you. They were having too much fun knocking the front runner down several notches. The primaries turned into a bloody battlefield where each victory could not offset past losses. It started out as a gentlemen's campaign, but as the weeks progressed there were few reputations left untainted. As your two strongest rivals slandered each other with cheap slurs and innuendoes, you relaxed at home.

Fifteen months ago, no one could have foreseen a deadlocked convention. Not one political analyst had entertained the notion of a second ballot. However, the primaries had taken their toll, leaving the two candidates without enough votes to win on the first ballot or enough support to win on the second. The party needed a hero to lead them to victory in November and you were the only logical choice.

You have only two months to turn your party's nomination into victory. You must project your personal image, and your position on political issues, to the electorate. Money must be raised, news conferences held, TV appearances made, and support rallied. The polls are good, but you need to establish your position and hold it until November.

BACKGROUND

POLITICAL PURSUITS is a game designed to simulate an actual presidential election, with special emphasis on the current political atmosphere in election year 1984. The object of the game is to win a presidential election. Success depends upon your choice of campaign activities: you may run TV or newspaper ads, travel to different regions of the country, issue position papers, or participate in news conferences or debates. You must take positions on political issues such as unemployment, military appropriations, women's rights, and American policy in the Middle East, and you must learn how to be flexible without contradicting yourself.

There are four levels of complexity, each with ten degrees of difficulty, in *POLITICAL PURSUITS*. The more complex levels introduce financial planning, fund-raising, etc. The degrees of difficulty set a political scenario with a difficulty corresponding to the degree selected. For example, if you choose a degree of 1, you will probably be the incumbent running for reelection. If you select 10, you will probably be designated as the challenger running against the incumbent.

The game begins on September 3 and proceeds week by week until election day. Each week, the player can choose among several activities to increase his standing in the polls. Every Monday, a new poll is taken to measure your popularity against your opponent's.

START-UP

To run *POLITICAL PURSUITS*, insert a system disk in your default drive and load Advanced BASIC into your PC by typing:

BASICA

Then insert your work copy of the *PC Disk* diskette into your default drive and type:

RUN "POL"

After start-up, you will be asked for your choice of level and degree of difficulty. Choose a level between 1 and 4 and a degree of difficulty between 1 and 10.

PLAYING THE GAME

In levels 2, 3, and 4, the game will start by identifying you as either a Republican or Democrat. In levels 3 and 4, the player must manage campaign expenses. Included in these game levels is the factor of incumbency, dependent upon the degree of difficulty chosen. The possibilities are:

- a) You are the incumbent running for reelection.
- b) The incumbent president is supporting your campaign.
- c) The incumbent president is supporting your opponent.
- d) You are running against the incumbent.

The level 4 candidate will also have to raise funds and adhere to the Federal campaign spending limit. If you exceed this limit or spend more than you have raised, you will either lose the game or have to close down your campaign operation and hope for the best.

HELP

If at any time during the game you get confused, you can just type:

H

and the program will offer you instructions on each option in the game.

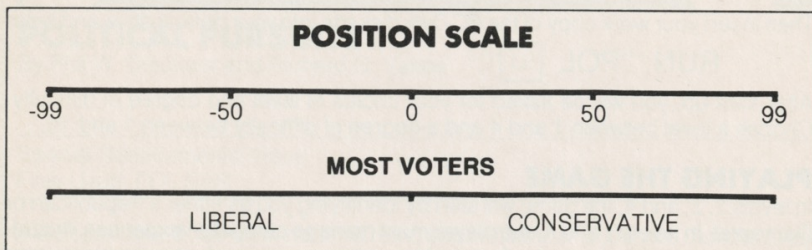
ISSUES

There are ten issues on which you must take either a conservative or a liberal position:

1. Labor
2. Deficit spending
3. Military appropriations
4. Unemployment
5. Strategic arms limits
6. Women's rights
7. Nuclear freeze
8. Middle East policy
9. Education
10. Social Security

In level 1, you must establish a platform at the beginning of the game by taking a position on all 10 issues. You will also be asked to state the position that best represents the personal image you wish to project. In levels 2, 3, and 4, you may begin the campaign with opinions on a few select issues only. As the campaign progresses, you will have the opportunity to restate or revise these positions and to take positions on other issues.

Political stands are represented by numbers in the range from -99 to 99. Negative numbers indicate liberal positions, with -99 as the most liberal or radical. Positive numbers represent conservative positions, with +99 as the most conservative or reactionary. Zero is a middle-of-the-road position.



These opinion ratings are not set in stone; you may want to change your positions on some issues during the campaign. Small changes are allowed, but beware of large opinion shifts which might lose some of your support. If you vacillate too much, the following message will appear:

!!!!!!!!!!!!!!WAFFLER!!!!!!!!!!!!!!

"Your positions are not consistent"

This is why you should write down your positions as they are established, so you will not forget them and make inconsistent entries. Each time the waffler message appears, your support weakens.

To help you understand the nature of the issues and the range of positions, we have provided the following policy statements as examples. They represent a liberal position of -50 and a conservative position of 50.

LABOR

- 50**—The most effective forces for improving our standard of living are strong unions in business and industry and the unrestricted right of collective bargaining.

- 50**—Unions' excessive wage demands and "featherbedding" cause declining productivity. Unions should be severely curbed, if not eliminated. Everyone should have the right to work without belonging to a union.

DEFICIT SPENDING

- 50**—Deficit spending results from excessive military expenditure and irresponsible tax cuts. Reducing the deficit necessitates cuts in military spending and increases in taxes.
- 50**—Deficit spending results from excessive spending on entitlement and social programs, so we must drastically reduce spending in these areas. Tax increases are not necessary to balance the budget.

NUCLEAR FREEZE

- 50**—Nuclear devices are Armageddon weapons which only assure mutual and permanent destruction, and must themselves be destroyed.
- 50**—Nuclear weapons are a deterrent to our enemies, who would fear swift and massive retaliation. A nuclear freeze would ultimately subjugate our nation.

CAMPAIGN STRATEGIES

The Monday polls, which report your own and your opponent's support in each region, are your regular source of feedback on the progress of your campaign. Use the results to help guide your strategies, but since polls are never quite accurate, don't place absolute faith in the results.

During each of the nine weeks of your campaign, you will have to make several strategy decisions. In levels 2, 3, and 4, you will have to state a position on an issue for each strategy option you choose. In all game levels, the following five choices are available:

1. Give a national television address.
2. Buy advertisements in regional newspapers.
3. Travel to one or two regions.
4. Put out a position paper stating your opinions on a certain issue.
5. Request a national poll to find your percentage of support on each issue in each region.

If you are playing in level 4, you also have the choice of staging a fund-raising campaign. Keep in mind that this will involve a general appeal by mail, an appeal to labor, or an appeal to business. If you have taken an unfavorable stand toward labor or business, you will not receive a favorable fund-raising response.

News conferences and debates are two more possible ways to air your views. Beware of sharp reporters who try to ask embarrassing questions during news conferences. Also, while debates between presidential candidates are rare, you must always be prepared for unscheduled encounters with the press.

CAMPAIGN FINANCE

In levels 3 and 4, you will be responsible for managing campaign funds. You are given funds in level 3, and you must live within your means. Level 4 provides you with an initial campaign fund and allows you to raise more money as needed. Choosing campaign strategies in levels 3 or 4 cost the following amounts:

- a) For each national TV address \$300,000.
- b) For each regional newspaper ad \$ 90,000.
- c) For each regional campaign tour \$100,000.
- d) For each position paper FREE.
- e) For each national poll \$500,000.

ELECTORAL VOTES BY STATES AND REGIONS

EAST (Region 1)	Electoral Votes	East (Cont.)	Electoral Votes
Connecticut	8	New York	36
Delaware	3	Pennsylvania	25
Maine	4	Rhode Island	4
Maryland	10	Vermont	3
Massachusetts	13	Washington, D.C.	3
New Hampshire	4		
New Jersey	16	EAST TOTAL	129

MIDWEST (Region 2)	Electoral Votes	Midwest (Cont.)	Electoral Votes
Illinois	24	Ohio	23
Indiana	12	West Virginia	6
Kentucky	9	Wisconsin	11
Michigan	20	MIDWEST TOTAL	105

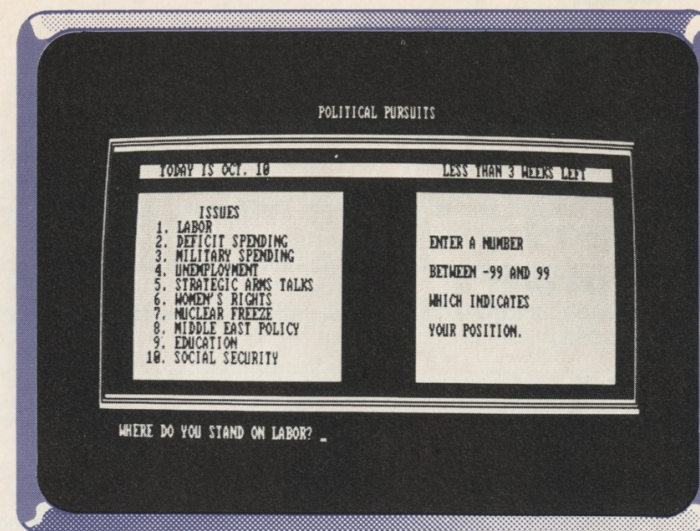
SOUTH (Region 3)	Electoral Votes	South (Cont.)	Electoral Votes
Alabama	9	North Carolina	13
Arkansas	6	South Carolina	8
Florida	21	Tennessee	11
Georgia	12	Texas	29
Louisiana	10	Virginia	12
Mississippi	7	SOUTH TOTAL	138

PLAINS (Region 4)	Electoral Votes	Plains (Cont.)	Electoral Votes
Iowa	8	North Dakota	3
Kansas	7	Oklahoma	8
Minnesota	10	South Dakota	3
Missouri	11		
Nebraska	5	PLAINS TOTAL	55

WEST (Region 5)	Electoral Votes	West (Cont.)	Electoral Votes
Alaska	3	Nevada	4
Arizona	7	New Mexico	5
California	47	Oregon	7
Colorado	8	Utah	5
Hawaii	4	Washington	10
Idaho	4	Wyoming	3
Montana	4	WEST TOTAL	111

GRAND TOTAL ELECTORAL VOTE (ALL REGIONS) 538

In addition to the cost of each strategy, there is a weekly cost of \$500,000 to \$750,000 for running a national campaign. In level 4, there is a legal spending limit of \$10,000,000 for your entire campaign.



The issues for your campaign

ELECTORAL COLLEGE

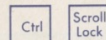
As in a real presidential election, *POLITICAL PURSUITS* determines the results by calculating the electoral college vote. The country is divided into five regions (East, South, Midwest, Plains States, and West), so be aware of how many votes each region has.

For the purpose of choosing a campaign strategy, a list of electoral votes, by region, is provided on the previous page.

On election day, you are shown the number of electoral votes you and your opponent receive in each region. It takes 270 electoral college votes to win the election. When there is a 269-269 tie, the winner is determined by a vote in the House of Representatives.

EXITING

In order to exit *POLITICAL PURSUITS* in the middle of the game, press:



and you will be returned to Advanced BASIC.



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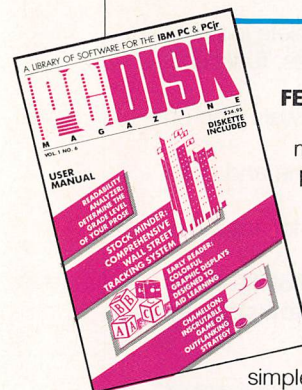
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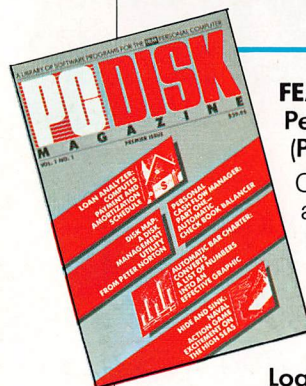
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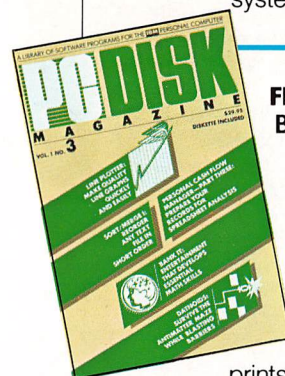
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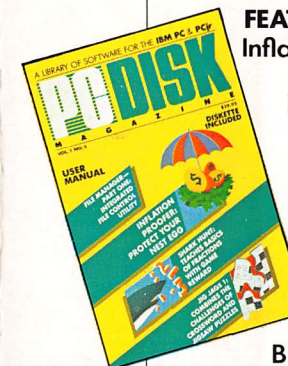
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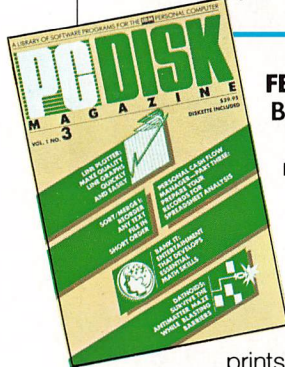
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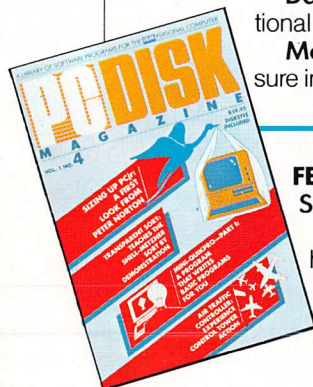
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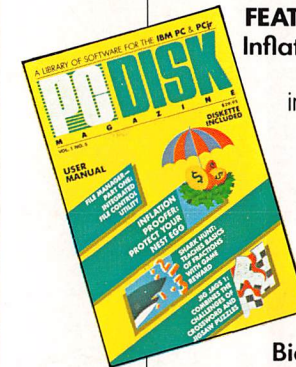
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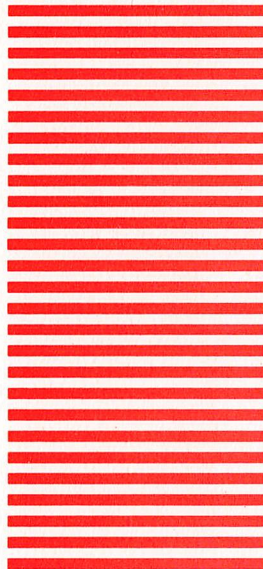
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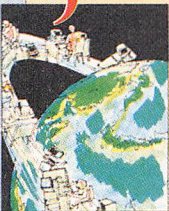
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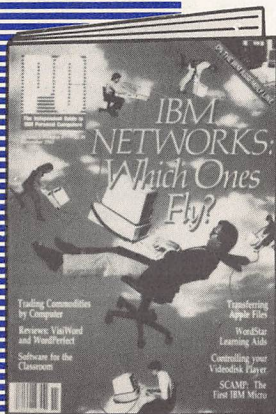
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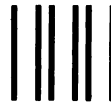
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